Instructors: Megan Cruzan, Andy Starr	Course/Grade Level: Biology A	Week: 1

Unit 1: Experimental Design *Objectives 1-8 : Science and Engineering Practices*	Evidence of Learning/Assessments: WB meeting

Standards (Learning Targets)	" I can ---- "	Instructional Strategies
B1.1D Identify patterns in data and relate them to theoretical models. **4 Analyzing and interpreting data** **2 Developing and using models**	I can analyze and interpret data. I can create and use a model that I can share with my scientific community I can make inferences and predictions	Science Games
B1.1A Generate new questions that can be investigated in the laboratory or field. **1 Asking questions and defining problems**	I can ask questions and define problems	Science Games

Key Vocabulary

Hypothesis	Theory			

Instructor: Cruzan/Starr	Course/Grade Level: Biology A	Week: 2

Unit 1: Experimental Design	Evidence of Learning/Assessments Practice-Basics of Science, Warm ups, Objective/target check

Standards (Learning Targets)	" I can ---- "	Instructional Strategies
B1.1A Generate new questions that can be investigated in the laboratory or field. **1 Asking questions and defining problems**	I can ask questions and define problems	Labs - Experimental Design Gizmo – Patterns finder
B1.1B Evaluate the uncertainties or validity of scientific conclusions using an understanding of sources of measurement error, the challenges of controlling variables, accuracy of data analysis, logic of argument, logic of experimental design, and/or the dependence on underlying assumptions. RST.9-10.8 Assess the extent to which the reasoning and evidence in a text support the author's claim or a recommendation for solving a scientific or technical problem **8 Obtaining, evaluation, and communicating information**	I can determine the variables in my experiment and appropriate ways to measure these variables. (using controlled experiments) I can analyze and draw conclusions from my data. I can communicate my findings with my scientific community.	Labs – Experimental Design
B1.2A Critique whether or not specific questions can be answered through scientific investigations. **3 Planning and carrying out investigations**	I can create a testable hypothesis I can determine the variables in my experiment and appropriate ways to measure these variables. (using controlled experiments)	Labs – Experimental Design

Key Vocabulary

Dependent variable	Theory	Hypothesis	Control Group	Controlled Experiment
Independent variable	Constants	Procedure	Germination	Experimental Group

Instructor: Cruzan/Starr	Course/Grade Level: Biology A	Week: 3-4

Unit 1: Experimental Design	Evidence of Learning/Assessments Gizmo – Growing Plants, Scientific Method – Bikini Bottom Experiments, Warm ups, Cool downs, Objective/target check

Standards (Learning Targets)	" I can ---- "	Instructional Strategies
B1.1B Evaluate the uncertainties or validity of scientific conclusions using an understanding of sources of measurement error, the challenges of controlling variables, accuracy of data analysis, logic of argument, logic of experimental design, and/or the dependence on underlying assumptions. RST.9-10.8 Assess the extent to which the reasoning and evidence in a text support the author's claim or a recommendation for solving a scientific or technical problem B1.2D Evaluate scientific explanations in a peer review process or discussion format. **8 Obtaining, evaluation, and communicating information**	I can determine the variables in my experiment and appropriate ways to measure these variables. (using controlled experiments) I can analyze and draw conclusions from my data. I can evaluate explanations with peers	Labs – Experimental Design Controlled Experiment Video (scientific variables) Exercise 1 - Simpson's Controls and variables Exercise 2 – Experimental Design Labs – Experimental Design (whiteboard meeting)
B1.1E Describe a reason for a given conclusion using evidence from an investigation. **7 engaging in argument from evidence**	I can support my conclusion with evidence	Labs – Experimental Design Exercise 2 – Experimental Design
B1.1C Conduct scientific investigations using appropriate tools and techniques (e.g., selecting an instrument that measures the	I can carry out scientific investigations using the correct tools and techniques I can follow precisely a complex multistep	Labs – Experimental Design Gizmo-Growing Plants Exercise 1 - Simpson's Controls and variables

desired quantity—length, volume, weight, time interval, temperature—with the appropriate level of precision). RST.9-10.3 Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text. **3 Planning and carrying out investigations**	procedure	
WHST.9.10.2 Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes **6 Constructing explanations and designing solutions**	I can write informative texts of scientific procedures/experiments	Labs – Experimental Design Lab Reports
B1.1A Generate new questions that can be investigated in the laboratory or field. **1 Asking questions and defining problems**	I can create a testable hypothesis I can ask questions and define problems	Labs - Experimental Design

Key Vocabulary

Dependent variable	Qualitative Data	Hypothesis	Analysis	Quantitative Data
Independent variable	Constant	Procedure	Conclusion	Experimental Group
Control Group	Controlled Experiment	Theory		

Instructor: Cruzan/Starr	Course/Grade Level: Biology A	Week: 5

Unit 2: Characteristics of Life and Classification	Evidence of Learning/Assessments Cool downs, Objective/target check

Standards (Learning Targets)	" I can ---- "	Instructional Strategies
L2.p1A Distinguish between living and nonliving systems **MS-LS1-1 Conduct an investigation to provide evidence that living things are made of cells; either one cell or many different numbers and types of cells**	I can evaluate if something is living.	What is living? Sorting activity Video Exercise 1

Key Vocabulary

Photoautotroph	Biotic	Abiotic Chemoautotroph	Organism	Heterotroph

Instructor: Cruzan/Starr	Course/Grade Level: Biology A	Week: 5-7

Unit 2: Characteristics of Life and Classification	Evidence of Learning/Assessments

Standards (Learning Targets)	" I can ---- "	Instructional Strategies
L5.p2 Similarities among organisms are found in anatomical features, which can be used to infer the degree of relatedness among organisms. In classifying organisms, biologists consider details of internal and external structures to be more important than behavior or general appearance. *(prerequisite* **10 Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms.**	I can analyze the classification of organisms according to their evolutionary relationships. I can classify organisms using a dichotomous key. I can define what a species is.	Exercise 2 Exercise 3 Using a dichotomous key – Salamanders Exercise 4 Reading – What is a species? Exercise 4

Key Vocabulary

Prokaryotic Cell	Virus	Dichotomous Key	Taxonomy	Eukaryotic Cell	Prokaryotic Cell
Kingdom	Multicellular	Unicellular	Autotroph	Heterotroph	Protists
Animals	Plants	Fungi	Bacteria	Species	

Instructor: Cruzan/Starr	Course/Grade Level: Biology A	Week: 8

Unit 3: Evolution and Natural Selection	Evidence of Learning/Assessments Warm ups, Cool downs, Objective/target check

Standards (Learning Targets)	" I can ---- "	Instructional Strategies
B3.4B Recognize and describe that a great diversity of species increases the chance that at least some living organisms will survive in the face of cataclysmic changes in the environment. **32 Evaluate the evidence supporting claims that changes in environmental conditions may result in: (1) increases in the number of individuals of some species, (2) the emergence of new species over time, and (3) the extinction of other species.**	I can recognize and describe that biodiversity increases the chance that at least some living organisms will survive in the face of extreme changes in the environment.	Thirsty Birds 1 Thirsty Birds 2
B5.1g Illustrate how genetic variation is preserved or eliminated from a population through natural selection (evolution) resulting in biodiversity **29 Construct an explanation based on evidence that the process of evolution primarily results from four factors: (1) the potential for a species to increase in number, (2) the heritable genetic variation of individuals in**	I can diagram and explain, using evidence, how new species arise	Exercise 1 – Natural Selection

a species due to mutation and sexual reproduction, (3) competition for limited resources, and (4) the proliferation of those organisms that are better able to survive and reproduce in the environment.		
B5.2c Trace the relationship between environmental changes and changes in the gene pool, such as genetic drift and isolation of subpopulations. **32 Evaluate the evidence supporting claims that changes in environmental conditions may result in: (1) increases in the number of individuals of some species, (2) the emergence of new species over time, and (3) the extinction of other species.**	I can predict changes in the gene pool based on environmental changes and/or prevalence of disease agents.	Thirsty Birds 2 Genetic Drift Reading

Key Vocabulary

Acquired Trait	Adaptation	Allele	Dominant Allele	Genotype	Heterozygous
Homozygous	Inherited trait	Gene	Gene Pool	Genetic Drift	Phenotype
		Genetic Variation	Natural Selection	Recessive Allele	Population

Instructor: Cruzan/Starr	Course/Grade Level: Biology A	Week: 9

Unit 3: Evolution and Natural Selection	Evidence of Learning/Assessments Quiz, Objective/target check

Standards (Learning Targets)	" I can ---- "	Instructional Strategies
B2.4d Analyze the relationships among organisms based on their shared physical, biochemical, genetic, and cellular characteristics and functional processes. **28 Communicate scientific information that common ancestry and biological evolution are supported by multiple lines of empirical evidence.**	I can examine fossil, anatomical, and biochemical evidence in order to determine relationships among organisms	Natural selection – Exercise 1 Moth/Weed examples Whales PowerPoint
B5.1A Summarize the major concepts of natural selection **29 Construct an explanation based on evidence that the process of evolution primarily results from four factors: (1) the potential for a species to increase in number, (2) the heritable genetic variation of individuals in a species due to mutation and sexual reproduction, (3) competition for limited resources, and (4) the proliferation of those organisms that are better able to survive and reproduce in the environment.**	I can explain how natural selection is based on an organisms' fitness in its environment based on: -behavioral adaptations -structural adaptations -reproductive adaptations	Natural selection – Exercise 1 Moth/Weed examples

30 Apply concepts of statistics and probability to support explanations that organisms with an advantageous heritable trait tend to increase in proportion to organisms lacking this trait.		
B5.1e Explain how natural selection leads to organisms that are well suited for the environment **31 Construct an explanation based on evidence for how natural selection leads to adaptation of populations.**	I can explain how natural selection is based on an organisms' fitness in its environment based on: -behavioral adaptations -structural adaptations -reproductive adaptations I can describe how new adaptations originate in a population	Natural selection – Exercise 1 Moth/Weed examples

Key Vocabulary

Adaptation	Allele	Dominant Allele			
Natural Selection	Acquired Trait	Recessive Allele			
Environmental Factor	Inherited Trait				

Instructor: Cruzan/Starr	Course/Grade Level: Biology A	Week: 10

Unit 3: Evolution and Natural Selection	Evidence of Learning/Assessments Test, ReTest

Standards (Learning Targets)	" I can ---- "	Instructional Strategies
B5.2b Explain that the degree of kinship between organisms or species can be estimated from the similarity of their DNA and protein sequences. **28 Communicate scientific information that common ancestry and biological evolution**	I can examine fossil, anatomical, and biochemical evidence in order to determine relationships among organisms	Whales Fossil Activity 1 Whales DNA Activity 2 Speciation Reading

are supported by multiple lines of empirical evidence.		
B5.1c Summarize the relationships between present-day organisms and those that inhabited the Earth in the past (e.g., use fossil record, embryonic stages, homologous structures, chemical basis). **28 Communicate scientific information that common ancestry and biological evolution are supported by multiple lines of empirical evidence.**	I can examine fossil, anatomical, and biochemical evidence in order to determine relationships among organisms	Whales Fossil Activity 1 Whales DNA Activity 2
B5.1d Explain how a new species or variety originates through the evolutionary process of natural selection **29 Construct an explanation based on evidence that the process of evolution primarily results from four factors: (1) the potential for a species to increase in number, (2) the heritable genetic variation of individuals in a species due to mutation and sexual reproduction, (3) competition for limited resources, and (4) the proliferation of those organisms that are better able to survive and reproduce in the environment.**	I can diagram and explain, using evidence, how new species arise	Speciation Reading
B5.1f Explain, using examples, how the fossil record, comparative anatomy, and other evidence supports the theory of evolution.	I can explain, using examples, how the fossil record, comparative anatomy, and other evidence supports the theory of evolution	Whales Fossil Activity 1 Whales DNA Activity 2

28 Communicate scientific information that common ancestry and biological evolution are supported by multiple lines of empirical evidence.		
B5.2a Describe species as reproductively distinct groups of organisms that can be classified based on morphological, behavioral, and molecular similarities. **32 Evaluate the evidence supporting claims that changes in environmental conditions may result in: (1) increases in the number of individuals of some species, (2) the emergence of new species over time, and (3) the extinction of other species.**	I can define what a species is.	Speciation Reading
B5.r2d Interpret a cladogram or phylogenetic tree showing evolutionary relationships among organisms. (recommended) **28 Communicate scientific information that common ancestry and biological evolution are supported by multiple lines of empirical evidence.**	Interpret a cladogram or phylogenetic tree showing relationships among organisms.	

Key Vocabulary

Phylogenic Tree	Reproductive Isolation	Geographic Isolation	
Speciation		Common Ancestor	
Evidence			

Instructor: Cruzan/Starr	Course/Grade Level: Biology A	Week: 11

Unit 3: Evolution and Natural Selection	Evidence of Learning/Assessments Warm-ups and Cool-downs, Practice – Microscopic Biology, Objective/target check

Standards (Learning Targets)	" I can ---- "	Instructional Strategies
B5.3A Explain how natural selection acts on individuals, but it is populations that evolve. Relate genetic mutations and genetic variety produced by sexual reproduction to diversity within a given population. **31 Construct an explanation based on evidence for how natural selection leads to adaptation of populations.**	I can explain how natural selection acts on individuals, but it is populations that change over time.	Exercise 2 – Coevolution/Geographic Isolation Sneaky Cricket Fitness Reading
B5.3B Describe the role of geographic isolation in speciation **32 Evaluate the evidence supporting claims that changes in environmental conditions may result in: (1) increases in the number of individuals of some species, (2) the emergence of new species over time, and (3) the extinction of other species.**	I can diagram and explain, using evidence, how new species arise.	Exercise 2 – Coevolution/Geographic Isolation

Key Vocabulary

Coevolution	Genetic Variation		
Evolution	Prey		
Speciation	Predator		

Instructor: Cruzan/Starr	Course/Grade Level: Biology A	Week: 12

Unit 4: **Energy**	Evidence of Learning/Assessments Warm-ups and Cool-downs, Osmosis Practice Problems, Practice – Cell Membrane, Objective/target check

Standards (Learning Targets)	" I can ---- "	Instructional Strategies
B3.1A Describe how organisms acquire energy directly or indirectly from sunlight. **12 Use a model to illustrate how photosynthesis transforms light energy into stored chemical energy.**	I can describe how organisms acquire energy directly or indirectly from sunlight.	What is energy? Energy stations Ecosystem/energy activity Zoom Book
B3.2A Identify how energy is stored in an ecosystem. **16 Use mathematical representations to support claims for the cycling of matter and flow of energy among organisms in an ecosystem.**	I can identify how energy is stored in an ecosystem	Ecosystem/energy activity
B3.2B Describe energy transfer through an ecosystem, accounting for energy lost to the environment as heat. **16 Use mathematical representations to support claims for the cycling of matter and flow of energy among organisms in an ecosystem.**	I can analyze energy pyramids for direction and efficiency of energy transfer.	Ecosystem/energy activity
B3.3A Use a food web to identify and distinguish producers, consumers, and decomposers and explain the transfer of energy	I can use a food web to identify and distinguish producers, consumers, and decomposers and explain the transfer of energy through trophic levels.	Ecosystem/energy activity

through trophic levels. **16 Use mathematical representations to support claims for the cycling of matter and flow of energy among organisms in an ecosystem.**		

Key Vocabulary

Energy	Ecosystem	Producer			
Consumer	Food Chain				
Decomposer	Food Web				

Instructor: Cruzan/Starr	Course/Grade Level: Biology A	Week: 13

Unit 4: **Energy**	Evidence of Learning/Assessments

Standards (Learning Targets)	" I can ---- "	Instructional Strategies

B2.2B Recognize the six most common elements in organic molecules (C, H, N, O, P, S). **13 Construct and revise an explanation based on evidence for how carbon, hydrogen, and oxygen from sugar molecules may combine with other elements to form amino acids and/or other large carbon-based molecules.**	I can recognize the six most common elements in organic molecules	What is in Food? Research Macromolecules
B2.2C Describe the composition of the four major categories of organic molecules (carbohydrates, lipids, proteins, and nucleic acids). **13 Construct and revise an explanation based on evidence for how carbon, hydrogen, and oxygen from sugar molecules may combine with other elements to form amino acids and/or other large carbon-based molecules.**	I can compare the structure and function of each of the four major categories of organic molecules	Research Macromolecules
B2.2D Explain the general structure and primary functions of the major complex organic molecules that compose living organisms. **13 Construct and revise an explanation based on evidence for how carbon, hydrogen, and oxygen from sugar molecules may combine with other elements to form amino acids and/or other large carbon-based molecules.**	I can compare the structure and function of each of the four major categories of organic molecules	Research Macromolecules
B3.2C Draw the flow of energy through an ecosystem. Predict changes in the food web when one or more organisms are removed. **16 Use mathematical representations to support**	I can draw the flow of energy through an ecosystem. Predict changes in the food web when one or more organisms are removed.	Exercise 1: Energy in the Ecosystem

claims for the cycling of matter and flow of energy among organisms in an ecosystem. **		

B2.4B Describe how various organisms have developed different specializations to accomplish a particular function and yet the end result is the same (e.g., excreting nitrogenous wastes in animals, obtaining oxygen for respiration). **10 Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms.**	I can **e**xplain how different organisms accomplish the same result using different structures	Dissections (Worm, Frog, Pig, Grasshopper, Virtual) Summary Board
B2.4C Explain how different organisms accomplish the same result using different structural specializations (gills vs. lungs vs. membranes). **10 Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms.**	I can **e**xplain how different organisms accomplish the same result using different structures	Dissections (Worm, Frog, Pig, Grasshopper, Virtual) Summary Board
B2.5B Explain how major systems and processes work together in animals and plants, including relationships between organelles, cells, tissues, organs, organ systems, and organisms. Relate these to molecular functions. **10 Develop and use a model to illustrate the hierarchical organization of interacting**	I can explain how major systems and processes work together in animals and plants (cellular and molecular levels)	Dissections (Worm, Frog, Pig, Grasshopper, Virtual)

systems that provide specific functions within multicellular organisms.		

Key Vocabulary

Energy	Molecule	Carbon Cycle			

Instructor: Cruzan/Starr	Course/Grade Level: Biology A	Week: 14

Unit 4: **Energy**	Evidence of Learning/Assessments Objective/target check, Quiz, Practice – Homeostasis, Warm ups and Cool downs

Standards (Learning Targets)	" I can ---- "	Instructional Strategies
B2.4e Explain how cellular respiration is important for the production of ATP (build on aerobic vs. anaerobic) **14 Use a model to illustrate that cellular respiration is a chemical process whereby the bonds of food molecules and oxygen molecules are broken and the bonds in new compounds are formed resulting in a net transfer of energy**	I can explain how cellular respiration is important for the production of ATP	Yeast Lab: Where does CO_2 come from

Key Vocabulary

Aerobic	Glucose				
Anaerobic	Molecule				

Instructor: Cruzan/Starr	Course/Grade Level: Biology B	Week: 15 & 16

Unit 4: **Energy**	Evidence of Learning/Assessments Objective/target check,

Standards (Learning Targets)	" I can ---- "	Instructional Strategies
B2.4e Explain how cellular respiration is important for the production of ATP (build on aerobic vs. anaerobic) **14 Use a model to illustrate that cellular respiration is a chemical process whereby the bonds of food molecules and oxygen molecules are broken and the bonds in new compounds are formed resulting in a net transfer of energy**	I can explain how cellular respiration is important for the production of ATP	PowerPoint Cell Respiration Exercise 2: OTRE Chart
B2.5B Explain how major systems and processes work together in animals and plants, including relationships between organelles, cells, tissues, organs, organ systems, and organisms. Relate these to molecular functions. **10 Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms.**	I can explain how major systems and processes work together in animals and plants (cellular and molecular levels)	Exercise 2: OTRE Chart

B2.5D Describe how individual cells break down energy-rich molecules to provide energy for cell functions. **14 Use a model to illustrate that cellular respiration is a chemical process whereby the bonds of food molecules and oxygen molecules are broken and the bonds in new compounds are formed resulting in a net transfer of energy**	I can describe how a cell obtains energy to function	Exercise 2: OTRE Chart
B2.2A Explain how carbon can join to other carbon atoms in chains and rings to form large and complex molecules **13 Construct and revise an explanation based on evidence for how carbon, hydrogen, and oxygen from sugar molecules may combine with other elements to form amino acids and/or other large carbon-based molecules.**	I can identify the composition of a glucose molecule	Molymods – Cellular Respiration and Photosynthesis
B2.5C Describe how energy is transferred and transformed from the Sun to energy-rich molecules during photosynthesis. **12 Use a model to illustrate how photosynthesis transforms light energy into stored chemical energy.**	I can describe how plants obtain the energy needed for photosynthesis	Powerpoint – Photosynthesis Exercise 2: OTRE Chart
B3.1C Recognize the equations for photosynthesis and respiration and identify the reactants and products for both. **17 Develop a model to illustrate the role of photosynthesis and cellular respiration in the cycling**	I can recognize the equations for photosynthesis and respiration I can identify the reactants and products for photosynthesis and respiration.	Powerpoint – Photosynthesis PowerPoint - Cell Respiration

of carbon among the biosphere, atmosphere, hydrosphere, and geosphere. **		
B3.1e Write the chemical equation for photosynthesis and cellular respiration and explain in words what they mean. **17 Develop a model to illustrate the role of photosynthesis and cellular respiration in the cycling of carbon among the biosphere, atmosphere, hydrosphere, and geosphere. ****	I can write the chemical equation for photosynthesis and cellular respiration I can explain in words what they mean.	Powerpoint – Photosynthesis PowerPoint -Cell Respiration
B3.1f Summarize the process of photosynthesis. **12 Use a model to illustrate how photosynthesis transforms light energy into stored chemical energy.**	I can summarize the process of photosynthesis.	Do plants photosynthesize all the time? Powerpoint – Photosynthesis
B2.1A Explain how cells transform energy (ultimately obtained from the sun) from one form to another through the processes of photosynthesis and respiration. Identify the reactants and products in the general reaction of photosynthesis **17 Develop a model to illustrate the role of photosynthesis and cellular respiration in the cycling of carbon among the biosphere, atmosphere, hydrosphere, and geosphere. ****	I can explain how energy is transformed in cells through photosynthesis and respiration. I can identify the reactants and products of photosynthesis	Powerpoint – Photosynthesis PowerPoint - Cell Respiration Exercise 2: OTRE Chart
B3.1D Explain how living organisms gain and use mass through the processes of photosynthesis and respiration. **13 Construct and revise an**	I can explain how living organisms gain and use mass through the processes of photosynthesis and respiration.	Powerpoint – Photosynthesis PowerPoint - Cell Respiration

explanation based on evidence for how carbon, hydrogen, and oxygen from sugar molecules may combine with other elements to form amino acids and/or other large carbon-based molecules.		

Key Vocabulary

Aerobic	Photosynthesis	ATP	Glucose		
Anaerobic	Cellular Respiration	Chloroplast	Molecule		

Instructor: Cruzan/Starr	Course/Grade Level: Biology B	Week: 17

Unit 4: **Energy**	Evidence of Learning/Assessments Objective/target check, Photosynthesis Quiz, Exercise 3, OTRE, Cool downs

Standards (Learning Targets)	" I can ---- "	Instructional Strategies
B2.1B Compare and contrast the transformation of matter and energy during photosynthesis and respiration. **16 Use mathematical representations to support claims for the cycling of matter and flow of energy among organisms in an ecosystem. ****	I can explain how energy and matter are transformed through photosynthesis and respiration.	Exercise 3 – Photosynthesis lab Plants OTRE Research plant (individual) Think pair share (groups)
B2.5A Recognize and explain that macromolecules such as lipids contain high energy bonds **14 Use a model to illustrate that cellular respiration is a chemical process whereby the bonds of**	I can explain how the four major organic molecules provide energy	Plants OTRE Exercise 2: OTRE Chart

food molecules and oxygen molecules are broken and the bonds in new compounds are formed resulting in a net transfer of energy.		
B2.5f Relate plant structures and functions to the process of photosynthesis and respiration **31 Construct an explanation based on evidence for how natural selection leads to adaptation of populations.**	I can relate plant structures and functions to the process of photosynthesis and respiration	Research plant (individual) Think pair share (groups)
B3.1B Illustrate and describe the energy conversions that occur during photosynthesis and respiration. **16 Use mathematical representations to support claims for the cycling of matter and flow of energy among organisms in an ecosystem. ****	I can show and describe the energy transformations that occur during photosynthesis and respiration.	Exercise 3 – Photosynthesis lab Plants OTRE Exercise 2: OTRE Chart

Key Vocabulary

Aerobic	Photosynthesis	ATP	Glucose	Carbon Cycle	
Anaerobic	Cellular Respiration	Chloroplast	Molecule	Reactants	Products
Aerobic	Photosynthesis	ATP	Glucose	Light Dependent Reactions	Light Independent Reactions

Instructor: Cruzan/Starr	Course/Grade Level: Biology B	Week: 18

Unit 4: **Energy**	Evidence of Learning/Assessments Objective/target check, Cool downs, Test

Standards (Learning Targets)	" I can ---- "	Instructional Strategies
B3.3b Describe environmental processes (e.g., the carbon and *nitrogen cycles*) and their role in processing matter crucial for sustaining life. **17 Develop a model to illustrate the role of photosynthesis and cellular respiration in the cycling of carbon among the biosphere, atmosphere, hydrosphere, and geosphere. ****	I can describe the carbon cycle and how it recycles matter within ecosystems	Carbon Cycle Summary Board Test

Key Vocabulary

Aerobic	Photosynthesis	ATP	Glucose	Carbon Cycle	
Anaerobic	Cellular Respiration	Chloroplast	Molecule	Reactants	Products
Aerobic	Photosynthesis	ATP	Glucose	Light Dependent Reactions	Light Independent Reactions